Tortricidae

by **A. Diakonoff**

(With plates XXIV—XXVI)

Dr. Klaus Sattler, Zoologische Sammlung des Bayerischen Staates, Munich, Germany, kindly entrusted me with the identification of a small collection of Tortricidae from Nepal. Although the high mountainous regions of the former India bordering on Nepal have been well searched by many collectors in the course of the last quarter of the nineteenth and the beginning of the twentieth century, Nepal itself was little accessible until recent times and remained little known. The following records, therefore, may be of interest. However, the fauna seems to be simply a continuation of that of Sikkim and Assam. All the present material was collected by Mr. F. Lobbichler.

I am grateful for the permission to keep certain duplicates for the collection of the Leiden Museum.

Fig. 1. *Mochlopyga* gen. nov. *humana* (Meyr.), head and wing neuration, ♂.

Tortricinae

Mochlopyga gen. nov. (Fig. 1, t. XXV figs. 7—8)

Head (fig. 1) with appressed scales, roughish on forehead, face rather rough. Antenna distinctly ciliate in male, ciliations 1/2. Palpus moderate, subporrect, median segment abruptly dilated triangularly beyond middle, roughish towards apex above, terminal segment moderate, exposed, obtuse. (Thorax denuded).

Fore wing (fig. 1) oblong-suboval, pointed, gradually dilated posteriorly, broadest at 4/5, costa gradually curved throughout, with a moderate costal fold not reaching 1/3, apex produced and pointed, termen strongly sinuate, long, oblique. 12 veins, all separate. 2 from well before middle (from almost 1/3), 3 from angle, 4 remote from 3, close to 5, 7 to termen, 9—11 distant, 11 from before middle of cell.

Hind wing (fig. 1) with 8 veins, 2 from before 2/3, 3 from angle, connate with 4, 5 closely approximated, 6 and 7 stalked.

Male genitalia (t. XXV fig. 7, 8) with tegumen broad, depressed and strong. Uncus hooded, very broad, rather short, top rounded. Socius small, clavate. Gnathos, a darkly sclerotized, rather short hook, with broad arms, lower surface of the whole gnathos except its top finely denticulate, valva short and very narrow, almost lanceolate. Cucullus bristled below top. Sacculus almost 1, strong but simple. There is a harpe, a triangular very strong erect ridge at the base of the valva above the base of the sacculus, apically armed with 2—3 strong teeth directed inwards. Aedeagus (t. XXV fig. 8) moderate, obtusely bent at 1/4, straight beyond bend, lower rim of orifice acutely pointed.

Type-species, *Tortrix humana* Meyrik 1912. A highly specialized off-shoot of the *Clepsis* group, probably related with *Pseudamelia* Obraztsov.

Mochlopyga humana (Meyrick 1912) **combin. nov.** (Fig. 1, t. XXV figs. 7—8)

Tortrix humana Meyrick 1912, Exot. Microl., vol. 1 p. 6 (♂, Darjeeling) — 1912, Lepid. Catal., fasc. 10, p. 29. — 1913, Genera Ins., fasc. 149, p. 27 — Clarke, 1955. Meyrick's Types, vol. 1, p. 163. — 1958, l. c., vol. 3, p. 240, t. 120 figs. 3—3 b (lectotype select., figs).

Manangbhot, 28°40′ N., 84°1′ E., Sabzi-chu, 3500 m, 12. 6. 1955, 1 ♂, gen. no. 3820.

Isodemis interjecta (Meyrick 1922) **combin. nov.**

Cacoecia interjecta Meyrick 1922, Exot. Microl., vol. 2, p. 496 (♂, locality omitted). — Clarke 1955, Meyrick's Types, vol. 1, p. 173.

Syndemis montivola Diakonoff 1941, Treubia, vol. 18, p. 40, t. 2 fig. 4 (♀), 5 (♂), t. 4 fig. 4 (genit. ♂), 5 (genit. ♀). (Darjeeling). **Syn. nov.**

Isodemis montivola, Diakonoff, 1952, Verh. Naturfr. Ges. Basel, vol. 63, p. 148.

The original description is incomplete, the collecting locality being omitted. This is the reason why I overlooked the name and described the species anew, 19 years after Meyrick. Many years later I found the type specimen of *interjecta* in the Paris Museum and recognized it at once as my

montivola. It is a characteristically marked species. The type specimen appears to come from Darjeeling, the same region as that of „*montivola*".

Pokhara, 28°14′ N., 83°59′ E., Leware, 1500 m, 16. 9. 1955, 1 ♂, gen. no. 3856.

Clepsis (Siclobola) rurinana (Linné 1758)

Phalaena Tortrix rurinana Linné 1758, Syst. Nat., ed. 10, p. 823. — Werneburg 1864, Beitr. Schmett.kunde, p. 230, 269 (syn. *rurinana* = *modeeriana* = *moderiana* = *consimilana*).

Phalaena Tortrix modeeriana Linné 1761, Fauna Suec., ed. II, p. 347 (a new name for *rurinana*).

Pyralis modeeriana, Fabricius 1794, Ent. Syst., vol. 3, p. 264, 91.

Tortrix modeeriana, Haworth 1811, Lep. Brit., p. 423.

Lozotaenia modeeriana, Stephens 1829, Cat. Brit. Ins., vol. 2, p. 171, no. 6871. — 1834, Ill. Brit. Ent. Haust., vol. 4, p. 78, no. 21. — Wood 1839, Index entom., p. 132, no. 868.

Phalaena Tortrix moderiana Linné 1767, Syst. Nat., ed. XII, vol. 1, part 2, p. 880 (nom. emend. pro *rurinana*).

Phalaena Tortrix angulana Villers 1799, Linn. Ent., vol. 2, p. 417, 612.

Pyralis ? avellana Panzer (non Linné) 1804, Schäfferi Icon. Ins. Syst., p. 124.

Tortrix consimilana Treitschke (non Hübner) 1830, Schmett. Eur., vol. 8, p. 75. — Zeller 1846, Isis, p. 220. — Herrich-Schäffer 1849, Schmett. Eur., vol. 4, p. 160, fig. 54, 347.

Tortrix semialbana Guenée 1845, Ann. Soc. Ent. France, ser. 2., vol. 3, p. 139. — Wilkinson 1859, Brit. Tortr., p. 57. — Heinemann 1870, Schmett. Deutschl. & Schweiz, ser. 2, vol. 1, part 1, p. 35. — Snellen 1882, Vlinders Nederl., vol. 2, p. 205. — Meyrick 1895, Handb. Brit. Lep., p. 532 — 1928, Rev. Handb. Brit. Lep., p. 507, 509. — Staudinger, in Rebel 1901, Catal. Lep. Pal., vol. 2, p. 86, no. 1518.

Tortrix croceana Curtis (non Haworth) 1850, Ann. & Mag. Nat. Hist., ser. 2, vol. 5, p. 110.

Tortrix biustulana Snellen (non Wood) 1882, vol. 2, p. 205 (lapsus).

Cacoecia semialbana Kennel 1910, Pal. Tortr., p. 142, t. 7 fig. 45. — 1910, in Spuler, Schmett. Eur., vol. 2, p. 248, t. 83 fig. 46.

Lozotaenia semialbana, Pierce & Metcalfe 1922, Genit. Brit. Tortr., p. 6, t. 2.

Clepsis (Siclobola) semialbana, Obraztsov 1955, Tijdschr. Entom., vol. 98, p. 218, figs. 120—124. — Hannemann 1961, Tierwelt Deutschl., vol. 48, p. 20, fig. 30, t. 2 fig. 15.

Clepsis semialbana, Inoue, Iconogr. Ins. Japan, vol. 1, p. 265, t. 177 fig. 8.

Nepal, Manangbhot, 28°40′ N., 84°1′ E., Sabzi-Chu, 3500 m, 12. 7. 1955, 3 ♂, gen. no. 3823.

The above synonymy leads unavoidably to the deplorable name change as proposed here. The species described by Linné in 1758 as *rurinana* has been re-named by him in 1761 as *modeeriana*. In 1767 the latter name has been spelled *moderiana* and has been indicated as an emendation of *rurinana*. The name *Phalaena Tortrix rurinana* L. has apparently escaped attention of later authors, so that the leading English lepidopterists of the first half of the last century all accepted the name *moderiana* (or *modeeriana*).

Werneburg (1854) was the first author who pointed out this synonymy and also synonymized *Tortrix consimilana* Treitschke. But his remarks in the excellent study „Beiträge zur Schmetterlingskunde" remained unnoticed. Subsequently the name *moderiana*, Linné's own emendation or *mo-*

deeriana, was abandoned for a much later name, *Tortrix semialbana* Guenée 1845, which at present is the generally established name for the species.

Recently Obraztsov (1957, p. 315) elaborated on this point. However, he retained the name *semialbana* on the following grounds: „Da seit der Veröffentlichung der *semialbana* (also mehr als 100 Jahre) die Art hauptsächlich unter diesem Namen bekannt ist, finde ich es für unzweckmäßig, die eingebürgerte Nomenklatur zu ändern."

This point of view is too arbitrary. Althoug I deplore the necessity of changing back to *rurinana,* it seems unavoidable. The insect is not very common and is of no economic importance.

Choristoneura quadratica spec. nov. (T. XXIV fig. 1, t. XXV figs. 9—10)

♂ 23 mm. Head pale fuscous and light tawny. Antenna brownish. Palpus pale ochrous, rather slender; terminal segment slightly mixed with blackish. Thorax pale ochrous, anteriorly infuscated. Abdomen pale fuscous-grey, anal tuft pale ochrous.

Fore wing without costal fold, elongate-subtruncate, costa tolerably curved along basal half, appearing slightly concave in middle, gently curved posteriorly, apex pointed, termen sinuate, little oblique. Pale ochrous-fuscous, with a slight gloss. Markings brownish-fuscous, and tawny-fulvous, suffused. An ill-defined, fuscous suffusion along base of costa, base of wing and base of dorsum, with a narrow blackish line along costal edge; a faint fuscous suffused spot in middle of disc beyond base; transverse fascia limited, indicated by a very oblique streak of fulvous-tawny irroration, irregular and narrow across middle of cell, dilated into a moderate elongate patch along fold at $^2/_3$; this patch connected by ill-defined paler tawny-fulvous suffusion with tornus and lower angle of cell; an ill-defined streak of this colour along upper half of posterior portion of cell, and a few faint spots beyond cell; sparse minute blackish points scattered towards apex; a small fuscous spot on closing vein. Cilia pale ochrous, mixed with fuscous.

Hind wing pale greyish-ochrous with a golden gloss, cilia concolorous.

Male genitalia (t. XXV figs. 9—10). Tegumen well-developed. Uncus rather short, broad, top truncate, hardly emarginate. Socius parietal, only short lower extremity free and pending. Gnathos rather strong, arms gradually rounded, point rather long, obtuse and rounded. Valva short, small, with a strong, ridge-like pulvinus. Sacculus strongly sclerotized, rather narrow, top obtuse, slightly scobinate. Vinculum angulate. Transtilla characteristic, a moderate band, bent and moderately prominent in middle, at the extremities rounded and rectangularly bent downward. Aedeagus short, little bent, with an apical spike below orifice; cornuti, two slender and long straight spines. (Slide no. 3821, holotype).

Mustangbhot, 29°11′ N., 83°1′ E., Ghilinggaon 3900 m, 9. 8. 1955, 1 ♂, holotype, gen. no. 3821.

Epiblema concava spec. nov. (T. XXIV fig. 2, t. XXVI fig. 12)

♂ 17 mm. Head and palpus sordid white. Antenna blackish-grey. Thorax

white, suffused with grey and mixed with black, anteriorly suffused with black. Abdomen pale grey.

Fore wing elongate, dilated but rather narrow, costa with a narrow fold to 1/3, rather straight anteriorly, posterior half considerably curved, apex pointed, termen clearly sinuate, long, rather oblique. Glossy white, irrorated with grey, marked with grey and black. Basal patch grey, on costa to 2/5, on dorsum to well beyond 1/3, edge strongly sinuate, being prominent below vein 11, strongly concave thence to dorsum; this edge suffused with dark grey or blackish, and containing a blackish subtriangular patch on dorsum, reaching with top to fold; a faint grey suffusion on base of wing, extending over base of costa and of dorsum; posterior half of costa with some five grey subtriangular marks, becoming larger posteriorly, ultimate mark just before apex; a conspicuous equilateral triangular patch of black irroration on 3/4 of dorsum, reaching to middle of disc, indistinctly connected by grey irroration with costa and upper portion of basal patch; irregular zigzag dark grey transverse lines, between penultimate costal mark and middle of termen; a few black points along dorsum. Cilia whitish, mixed with grey, basal third black.

Hind wing pale grey, except along dorsum, which is silvery-white; suffused with grey, becoming darker grey towards costa and apex. Cilia whitish.

Male genitalia (t. XXVI fig. 12). Tegumen triangular; uncus absent. Socius moderate, rather slender, with a broad base, pending. Gnathos membraneous, rather narrow, with rounded angles. Valva strongly constricted, cucullus broad and short, upper half obtuse, lower semicircular. Sacculus obtusely prominent in middle, its inner edge forming a blade, rounded rostrad, dentate caudad. (Slide no. 3825, holotype).

Manangbhot, 28°40′ N., 84°1′ E., Sabzi-Chu, 3500 m, 12. 7. 1955, 1 ♂, holotype, gen. no. 3825.

The unique specimen is rather rubbed, but quite distinct, especially by the genitalia, and also by the concave (sinuate) edge of basal patch. Possibly nearest to the Palaearctic *nigromaculana* Hw. but with more rounded and broader cucullus. Perhaps also related with *E. exquisitana* Chr., from Amur, but differing by markings; I did not have an opportunity to study the genitalia of the last-mentioned species.

Eucosma leucotoma spec. nov. (T. XXIV fig. 3, t. XXV fig. 11)

♀ 16—17 mm. Head, palpus, and thorax pale tawny-ochrous, thorax with a faint median infuscation. Palpus slender and rather short, median segment gently dilated towards apex, terminal segment short, pointed. Antenna pale ochrous-fuscous. Abdomen pale fuscous-ochrous.

Fore wing with vein 11 from well before middle of cell; wing rather narrow, costa moderately curved at extremities, straight in middle, apex obtusely pointed, termen clearly sinuate, oblique. Pale ochrous, suffused with bright tawny-ochrous, partially with reddish; marked with white, and

irrorated with minute purplish scales. Basal patch from well before 1/4 of costa, its edge running to middle of fold, concave below costa, slightly prominent in middle, straight and vertical across fold; dorsum below fold suffused with olive-fuscous, obliterating lower part of the edge of basal patch; pale ground colour forming a rather distinct oblique and fasciate, wedge-shaped mark across wing; its dilated portion occupying less than second fifth of costa, strongly narrowed as far as middle of fold, thence less distinct, linear, running along fold to above dorsum; posterior half of wing more densely suffused with reddish-tawny; costa marked throughout with approximated rounded-triangular dots of purplish irroration and tawny suffusion; along posterior fifth of costa these marks extended across upper half of wing, so as to form tawny strigulae; interspace between third and second penultimate strigulae and between second an ultimate strigulae, filled out with white, so as to form two well-defined parallel outwards oblique and on the outside hardly concave strigulae; a conspicuous silvery-white streak from below end of the first of the white streaks, traversing ocellus, to above end of dorsum, straight, with its anterior edge slightly dentate between veins; ocellus faintly suffused with glossy grey-lilac; veins before white streak slightly suffused with dark grey; white streak followed by a parallel tawny streak, traversed by several jet-black horizontal marks; beyond these glossy grey ocellus edged with white; dorsal edge moderately infuscated. Cilia pale tawny, mixed with purplish (imperfect).

Hind wing with veins 3 und 4 stalked; glossy pale ochrous-grey. Cilia fuscous-whitish (imperfect).

Female genitalia (t. XXV fig. 11). Sterigma, a circular weak sclerite with a deep emargination of upper edge, reaching almost to centre; ostium bursae and lamella postvaginalis fitting in this emargination; lamella subquadrate, strongly punctate along median part. Colliculum moderate, sclerotized. Corpus bursae minutely aciculate, signa inequal, one small, pointed, another large, blunt (slide no. 3822, paratype).

Mustangbhot, 29°11′ N., 83°58′ E., Kehami, 3700 m, 20. 8. 1955; 3 ♀♀; holotype and two paratypes, all slightly damaged; gen. no. 3822, paratype.

The species has the entire superficial appearance of an *Eucosma*. The absence of males makes the exact position not certain.

Gibberifera obscura spec. nov. (T. XXIV fig. 6, t. XXVI fig. 16)

♂ 15 mm. Head white, sides of face and vertex black. Palpus rather slender, only at top of median segment abruptly dilated; grey, apex of median segment and entire terminal segment white. Antenna blackish. Thorax black mixed with grey. Abdomen fuscous, base and anal tuft pale ochreous.

Fore wing moderately broad, suboval, costa gently curved throughout, without costal fold; apex obtusely pointed, termen sinuate, oblique, rather long. Light lilac-grey. Markings formed by fuscous and blackish irroration. Basal patch to before 1/4 of costa, and to well before middle of dorsum, edge tolerably straight, faintly convex, broader below fold; this patch suffused

with black along costa and along edge, the latter suffusion gradually dilated towards, and on, dorsum; very irregular blackish markings posteriorly forming an incomplete slightly outwards-oblique series from $^3/_5$ of costa to $^3/_4$ of dorsum, this series interrupted below costa and above and below middle of disc; a large fuscous preterminal patch from vein 7 to vein 2, extremities irregular; a fuscous, black-centred small spot in apex; costa suffused with dark grey, with a series of black triangular suffused marks; terminal edge with a series of fine vertical fuscous short strigulae. Cilia whitish with three black lines mixed with grey.

Hind wing light grey-fuscous, with a faint gloss, becoming deeper fuscous towards apex and costa. Cilia concolorus.

Male genitalia (t. XXVI fig. 16). Very similar to those of *simplana*. Cucullus slightly narrower, with a distinct prominence of the inner edge above its middle; valva itself is clearly narrower than in *simplana*. Aedeagus stronger sclerotized. (Slides no. 3824, holotype; no. 3960, paratype).

Manangbhot, 28°40′ N., 84°1′ E., Sabzi-Chu, 3500 m, 12. 7. 1955, 1 ♂, holotype, gen. no. 3824, 1 ♂, paratype, gen. no. 3960.

The paratype specimen is more densely suffused with fuscous and irregularly marked with dark fuscous, obscuring the basal patch and the transverse fascia.

The genitalia are very similar to those of *simplana*, but the shape of the fore wings and the colouring and markings are entirely different.

Gibberifera simplana (Fischer von Röslerstamm 1834) subsp. **glaciata** (Meyrick 1907) **status nov.** (T. XXIV figs. 4—5, t. XXVI figs. 13—15)

Penthina simplana Fischer von Röslerstamm 1834—1838, t. 22 fig. 2 (1834), p. 38 (1838). — Duponchel 1844, Catal. Lep. Eur., p. 297. — Meyrick 1893, Handb. Brit. Lep., p. 473.

Eupoecilia simplana, Guenée 1845, Ind. Microl., p. 60.

Tortrix Penthina simplana, Herrich-Schäffer 1849, Schmett. Eur., vol. 4, p. 234 (syn. „*oppositana* Khlw"). — 1852, l. c., vol. 6, Syst. Lep., p. 44, no. 725; Ind. Synon., p. 41 (syn. *ambiguana* Dup.).

Hedya simplana, Wilkinson 1859, Brit. Tortr., p. 119.

Grapholitha simplana, Heinemann 1863, Schmett. Deutschl. & Schweiz, vol. 1, pars 1, p. 209.

Steganoptycha simplana, Rebel, in Staudinger & Rebel 1901, Catal. Lep. Pal., vol. 2, p. 110, no. 1969.

Epiblema simplana, Meyrick 1928, Rev. Handb. Brit. Lep., p. 546.

Semasia simplana, Kennel 1910, Pal. Tortr., p. 489, t. 19 fig. 32.

Epinotia (Enarmonia) simplana, Kennel, in Spuler 1910, Schm. Eur., vol. 2, p. 275, t. 85, fig. 61.

— — — *simplana*, Pierce & Metcalfe 1922, Genit. Brit. Tort., p. 76, t. 26.

Gibberifera simplana, Obraztsov 1945, Ztschr. Wien. Ent. Ges., vol. 30, p. 35. — Hannemann 1961, Tierwelt Deutschl., vol. 48, p. 149, fig. 302, t. 21 fig. 13.

Cochylis ambiguana Duponchel 1834 (non Treitschke), Hist. Nat. Lép., vol. 9, p. 505, t. 262 fig. 7.

Cydia glaciata Meyrick 1907, Journ. Bombay Nat. Hist. Soc., vol. 18, p. 142 (Assam). **Syn. nov.** Obraztsov, in litt.

Eucosma glaciata, Clarke 1958, Meyrick's Types, vol. 3, t. 181 figs. 4—4 a.

When comparing the male and female genitalia, colouring, and markings of *simplana* with those of *glaciata,* of the material kindly sent to me for this purpose by Mr. J. D. Bradley, British Museum (Natural History), I observed a great similarity. At the same time Dr. Obraztsov wrote me that in his opinion *glaciata* was but a synonym of *simplana.*

However, the description of the new species of *Gibberifera* above shows that differences of the genitalia between species of this genus may be but slight; and that caution is advisable.

Although the male genitalia of *simplana* (t. XXVI fig. 15) and *glaciata* are very similar, the genitalia of the females are less so (t. XXVI figs. 13—14); besides, the markings show a constant difference (t. XXIV figs. 4 and 5): where the edge of the basal patch in *simplana* is distinctly angulate below middle, in *glaciata* this edge is sinuate, being concave above, convex below, and oblique.

Therefore I propose to regard *glaciata* as a subspecies of *simplana,* pending further evidence of longer series of the former species, not available at the present time.

Material compared: *Gibberifera simplana,* 1 ♂, 1 ♀, from England, Abbots Wood (Brit. Mus.), gen nos. 3951 and 3952; 2 ♀♀, „Anglia", 1 ♀, from Germany, Wiesbaden (Leiden Mus.); *glaciata,* Khasi Hills, Assam, 1906, syntype, ♀; Kurseong, Sikkim, 5000 ft. VI. 1922, T. B. Fletcher, 2 ♀♀ (Brit. Mus.), gen. nos. 3950 and 3951.

Anschrift des Verfassers:

Dr. A. Diakonoff,

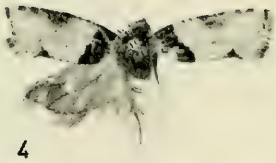
Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands.

Tafel XXIV

1

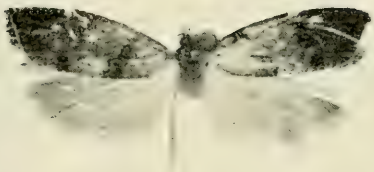
2

3



4

5



6

Erklärung zu Tafel XXIV

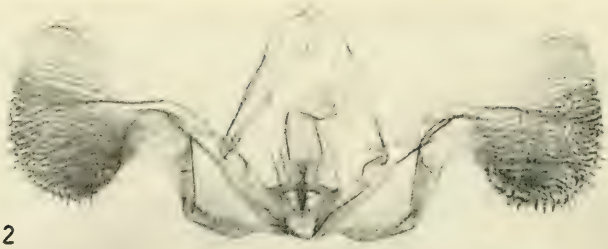
Fig. 1. *Choristoneura quadratica* spec. nov., holotype, ♂. Fig. 2. *Epiblema concava* spec. nov., holotype, ♂. Fig. 3. *Eucosma leucotoma* spec. nov., holotype, ♀. Fig. 4. *Gibberifera simplana glaciata* (Meyr.), ♀, gen. no. 3951 (Sikkim). Fig. 5. *G. simplana* (F. v. R.), ♂, gen. no. 3952 (England). Fig. 6. *G. obscura* spec. nov., holotype, ♂.

Erklärung zu Tafel XXV

Genitalia. Fig. 7. *Mochlopyga humana* (Meyr.), ♂. Fig. 8. The same, aedeagus. Fig. 9. *Choristoneura quadratica* spec. nov., ♂. Fig. 10. The same, aedeagus. Fig. 11. *Eucosma leucotoma* spec. nov., ♀, paratype.

7
8
11
9
10

Tafel XXVI



Erklärung zu Tafel XXVI

Genitalia. Fig. 12. *Epiblema concava* spec. nov., ♂. Fig. 13. *Gibberifera simplana glaciata* (Meyr.), ♀. Fig. 14. The same, bursa copulatrix. Fig. 15. *G. simplana simplana* (F. v. R.), ♂ (England). Fig. 16. *G. obscura* spec. nov., holotype, ♂.